2: Murphy G-4 (no date) 1953 AF15 East China AF15

1930's, or about half of the large-scale mechanized soap factories in China. They drew 90 per cent of their raw materials from domestic sources. Lye (potash) was obtainable from plants in Shanghai. Vegetable tallow and vegetable oils (most importantly, cotton, peanut, rape seed, sesamum seed, and castor) came to the city via the Yangtze system from the major producing areas of central China.[31] The fruit of the tallow tree is gathered in central China in October and the oil pressed out during the winter, but it is not marketed in Hankow and sent to Shanghai until the spring rise of the waterways leading to Hankow makes easy navigation possible. A dry spring makes the market soar in both Hankow and Shanghai.[32]

The average Shanghai price before the war was nevertheless substantially below that of foreign vegetable oil imports (despite the production of coconut oil in southeast Asia). Vegetable wax from central China also largely replaced foreign imports of paraffin wax after 1930, when the *likin* (internal customs tax) was abolished by the Kuomintang government. The cheapness of domestic tallow, oils, and wax in Shanghai relative to seaborne foreign imports was clearly related to the use of inland water transport in bringing these products to the city. The fact that 80 per cent of Shanghai's soap production in the early 1930's was marketed outside Kiangsu also suggests that the city's water connections with its hinterland were basic in locating the industry there. Only 10 per cent of the Shanghai soap industry's raw materials were imported, largely coconut and olive oils for making especially high-quality soap for the domestic market.[33]

By contrast, the Shanghai match industry was almost entirely dependent on overseas sources for its raw materials. It imported all of its sulphur (largely from Japan), all of its paper and cardboard (from Sweden), and all of its match-making machinery (from Japan). Most of its phosphorous was also imported, but some was produced locally from animal bones. Ample sulphuric acid was produced in Shanghai. For this product of such high unit-value by weight, raw materials to which so much value was added by manufacture could economically be imported, and the finished matches were marketed in every province of China.[34] Shanghai was never-

2: Murphy G-4 (no date) 1953 AF15 East China AF15

381 theless industrially out of gear with the rest of China to such an
439 extent that the match industry imported even its paper and cardboard.*

Chinese sources could maintain Shanghai's soap manufacturing, using relatively bulky agricultural raw materials, but the match industry, dependent on relatively finished and specialized materials, was obliged to rely predominantly on overseas sources. The city's market was able to hold both of these greatly dissimilar enterprises, each typical of much of its manufacturing complex.

306 The jade-cutting industry may be cited as a final illustration of
439 the market-oriented character of Shanghai manufacturing as a whole. While jade-cutting would presumably be less likely than diamond-cutting to gravitate to primate financial and banking centers, it is equally dependent on specially skilled labor, which is most often found in the largest cities, and on the commercial services and connections of a primate market. Most of the world's jade is mined in northern Burma, but Shanghai, rather than Rangoon or Calcutta, was the world's leading jade center for cutting, polishing, and marketing. It imported its rough jade from Burma by sea, paying a 50 per cent export duty *ad valorem*, and sold the finished product not only in China but all over the world. Japanese attempts at competition in this industry during the 1920's failed to dislodge Shanghai from its leading position.[85] An early start and accumulated skill have been more important in this industry than in almost any other, but it was the Shanghai market which attracted and continued to hold it.

The Cost of Raw Materials

435 It will be useful to estimate the percentage of total costs which is represented in different Shanghai industries by the cost of delivered raw materials in order to throw light on the competitive position of the city as a location for manufacturing. The published estimates of costs are contradictory, and the implication is that accurate information is not available, an understandable condition in view of the

* The relative importance in Shanghai manufacturing of the industries discussed above (pp. 171–178) is indicated by the tables above on pages 168, 169, and 170. Consumption figures are unfortunately not available.